

CLAIMS

WE CLAIM:

1. A method for achieving an ethylene-like effect on a plant or plant part selected from a whole plant, a fruit, a flower, a seed, a leaf, a root or a stem, the method comprising the step of treating the plant or plant part with a composition comprising an N-acylethanolamine (NAE) defined by the following formula in an amount sufficient to achieve the ethylene-like effect on the plant or plant part: $\text{RCONHCH}_2\text{CH}_2\text{OH}$, wherein R is hydrogen, or a straight, branched, cyclic or polycyclic, saturated or unsaturated $\text{C}_1\text{-C}_{22}$ alkyl group.
2. The method of claim 1, wherein the ethylene-like effect is enhancement of ripening or maturation of a plant part.
3. The method of claim 1, wherein the plant part is a fruit or leaf and the ethylene-like effect is enhancement of color change of the fruit or leaf.
4. The method of claim 1, wherein the ethylene-like effect is reduction in size of a plant or plant part.
5. The method of claim 1, wherein the plant part is a cotton boll and the ethylene-like effect is promotion of boll opening.
6. The method of claim 1, wherein the plant part is treated with the composition before it is harvested from a growing plant.
7. The method of claim 1, wherein the plant part is treated with the composition after it is harvested from a growing plant.
8. The method of claim 1, wherein treating the plant or plant part with the composition is accomplished through a method selected from spraying the plant or plant part with the composition, dipping the plant or plant part into the composition, or vacuum infiltrating the composition into the plant or plant part.

9. The method of claim 1, wherein the plant part is selected from a flower, a fruit or a leaf.
10. The method of claim 1, wherein the NAE is selected from NAE-1, NAE-2, NAE-4:0, NAE-6:0, NAE-8:0, NAE-10:0, NAE-18:1(Δ^9).
11. The method of claim 1, wherein the NAE concentration in the composition is from about 1 mg/l to about 2,000 mg/l.
12. The method of claim 1, wherein the NAE concentration in the composition is from about 10 mg/l to about 1,000 mg/l.
13. The method of claim 1, wherein the NAE concentration in the composition is from about 20 mg/l to about 500 mg/l.
14. A method for achieving a cytokinin-like effect on a whole plant, plant part or fungus, wherein the plant part is selected from a fruit, a flower, a seed, a leaf, a root or a stem, the method comprising the step of treating the plant, plant part or fungus with a composition comprising an N-acylethanolamine (NAE) defined by the following formula in an amount sufficient to achieve the cytokinin-like effect on the plant, plant part or fungus:
 $\text{RCONHCH}_2\text{CH}_2\text{OH}$, wherein R is hydrogen, or a straight, branched, cyclic or polycyclic, saturated or unsaturated $\text{C}_1\text{-C}_{22}$ alkyl group.
15. The method of claim 14, wherein the cytokinin-like effect is maintaining or enhancement of plant vigor.
16. The method of claim 14, wherein the cytokinin-like effect is enhancement in number or size of the plant, plant part or fungus.
17. The method of claim 16, wherein the plant part is a flower or fruit on a growing plant.
18. The method of claim 14, wherein the cytokinin-like effect is chlorophyll retention.

19. The method of claim 18, wherein the plant is grass and the cytokinin-like effect is maintaining green color of the grass.
20. The method of claim 14, wherein the fungus is mushroom and the cytokinin-like effect is enhancement in storage stability of the mushroom.
21. The method of claim 14, wherein treating the plant, plant part or fungus with the composition is accomplished through a method selected from spraying the plant, plant part or fungus with the composition, dipping the plant, plant part or fungus into the composition, or vacuum infiltrating the composition into the plant, plant part or fungus.
22. The method of claim 14, wherein the plant part is selected from a flower, a fruit or a leaf.
23. The method of claim 14, wherein the NAE is selected from NAE-4:0, NAE-10:0, NAE-12:0, NAE-14:0, NAE-16:0, NAE-18:1(Δ^9).
24. The method of claim 14, wherein the NAE concentration in the composition is from about 1 mg/l to about 2,000 mg/l.
25. The method of claim 14, wherein the NAE concentration in the composition is from about 10 mg/l to about 1,000 mg/l.
26. The method of claim 14, wherein the NAE concentration in the composition is from about 20 mg/l to about 500 mg/l.